Harold —

I made this in anticipation of writing a report on the cartridge dents as soon as I get test results from Nichols. I broke down and wrote to him expressing urgency, for I consider that this matter will absolutely clear the M-C.

I also told Schorner about this, but no one else.

Dick

EXHIBIT 1

MANNLICHER-CARCANO ACTION (OPEN)

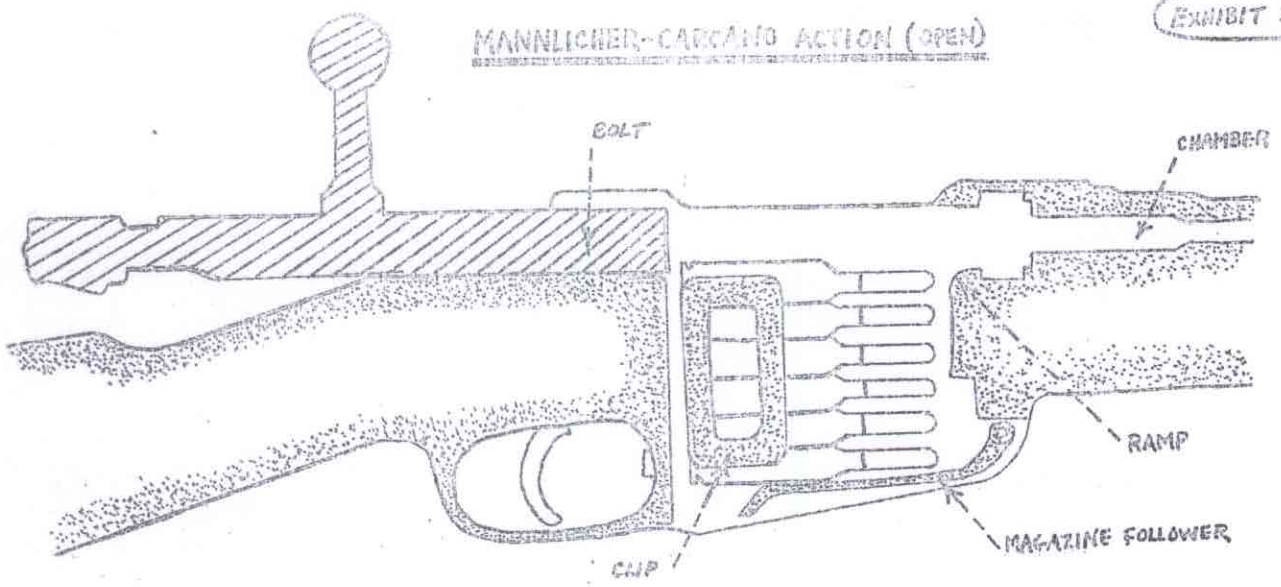


EXHIBIT 2

NOMENCLATURE (AMMUNITION)

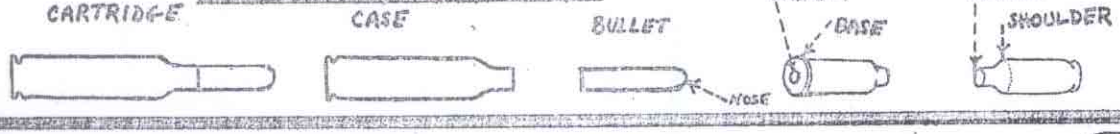
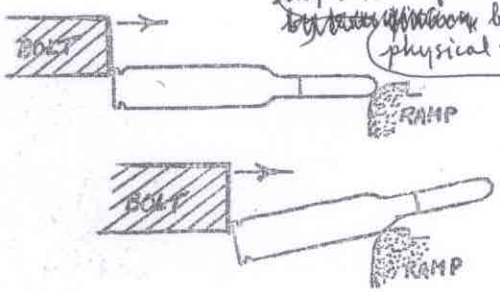


EXHIBIT 3

Subject to verification ~~by [illegible]~~ by physical test

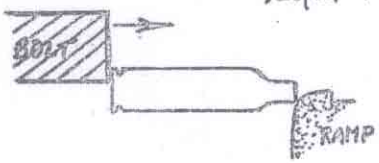


HOW THE CASE SHOULDERS WERE DENTED (CEs 544 and 545)

As the bolt thrusts the bulleted cartridge forward, the nose of the bullet strikes the ramp. The cartridge tilts, and the bolt continues its forward thrust on the tilted cartridge. The shoulder of the case strikes the ramp <u>and is dented</u>. The bolt thrusts the cartridge into the chamber, and closes over it.

Subject to verification

EXHIBIT 4



HOW THE CASE MOUTH WAS DENTED (CE 543)

As the bolt thrusts the unbulleted cartridge case forward out of the clip, the mouth of the case strikes the ramp <u>and is dented</u>. Continuing its forward motion, the bolt thrusts the unbulleted case into the chamber.

From "Cartridges of the World", 2nd edition, by Franck C. Barnes, edited by John T. Amber, The Gun Digest Company, Chicago, Ill,, 1969.

Symbol	Cartridge	Bullet		Max. permissible breech pressure lbs./sq.in.	Barrel-length inches	Velocity ft. per sec.			
		Type	Weight grs.			Muzzle	100 yds.	200 yds.	300 yds.
201 R	.22 Hornet*	P.S.P.	46	42 690	23,5	2430	1750	1380	1100
215 R	.22 Hornet*	F.M.C.	46	42 690	23,5	2430	1750	1380	1100
1 R	5,6x35 R	F.P.	39	34 150	23,5	1940	1290	1010	—
105 R	5,6x35 R†	F.P. F.M.C.	39	34 150	23,5	2630	1650	1150	—
220	.222 Rem.	P.S.P.	50	45 540	23,5	3180	2625	2150	—
219	.222 Rem.	F.M.C.	50	45 540	23,5	3180	2705	2280	—
147 R	5,6x52 R	F.M.C.	72	21 270	23,5	2890	2430	2050	1730
276	5,6x57	KS	74	54 070	23,5	3410	3050	2705	2380
295	5,6x57	F.M.C.	74	54 070	23,5	3410	3050	2705	2380
276 R	5,6x57 R	KS	74	54 070	23,5	3410	3050	2705	2380
295 R	5,6x57 R	F.M.C.	74	54 070	23,5	3410	3050	2705	2380
8	6,5x54 M.Sch.	S.P.	159	45 540	17,5	2180	1930	1710	1500
217	6,5x57	HMoH	159	48 380	23,5	2675	2345	2050	1805
217 R	6,5x57 R	HMoH	154	41 270	23,5	2625	2295	2020	1790
113 R	6,5x57 R	S.P. F.M.C.	93	41 270	23,5	3265	2885	2545	2265
112	6,5x57	S.P. F.M.C.	93	48 380	23,5	3315	2920	2590	2310
277	6,5x57°	KS	93	48 380	23,5	3315	2905	2545	2200
278 R	6,5x57 R°	KS	93	41 270	23,5	3265	2855	2495	2165
218	6,5x68	HMP	131	54 070	25,5	3230	2820	2460	2145
218 R	6,5x68 R	HMP	131	48 380	25,5	3230	2820	2460	2145
279	6,5x68°	KS	93	54 070	25,5	3805	3395	2985	2625
279 R	6,5x68 R°	KS	93	48 380	25,5	3705	3280	2905	2560
136	6,5x68	P.S.P.	93	54 070	25,5	3805	3330	2905	2575
136 R	6,5x68 R	P.S.P.	93	48 380	25,5	3705	3230	2840	2510
273	6,5x68	F.M.C.	93	54 070	25,5	3805	3330	2905	2575
273 R	6,5x68 R	F.M.C.	93	48 380	25,5	3705	3230	2840	2510
272	.270 Winch.	HMK	154	51 230	25,5	2840	2590	2360	2165

* ATTENTION: Only for barrels with a bore diameter of 5.50 mm (appr. .217 in.) and a groove diameter of 5.64 mm (appr. .222 in.). This cartridge cannot be recommended for use in subcaliber barrels.
† This load is destined for weapons with strong actions only. The cartridges can be identified by the red lacquer seal of the primer.
° Projected

Energy ft. lbs.				Time of flight sec.			Mid-Range Trajectory with telescopic sights 2" above line of bore		
Muzzle	100 yds.	200 yds.	300 yds.	100 yds.	200 yds.	300 yds.	100 yds.	200 yds.	300 yds.
605	315	195	125	0,14	0,34	0,58	— 0,6	+ 4,6	—
605	315	195	125	0,14	0,34	0,58	— 0,6	+ 4,6	—
325	145	90	—	0,19	0,47	—	+ 0,7	+ 9,6	—
600	235	115	—	0,15	0,37	—	+ 0,1	+ 5,5	—
1125	765	515	—	0,10	0,23	—	— 0,5	+ 1,9	—
1125	815	575	—	0,10	0,22	—	— 0,4	+ 1,3	—
1335	945	670	480	0,11	0,25	0,41	— 0,4	+ 2,0	+ 7,4
1910	1530	1205	930	0,09	0,20	0,31	— 0,4	+ 0,8	+ 3,4
1910	1530	1205	930	0,09	0,20	0,31	— 0,4	+ 0,8	+ 3,4
1910	1530	1205	930	0,09	0,20	0,31	— 0,4	+ 0,8	+ 3,4
1910	1530	1205	930	0,09	0,20	0,31	— 0,4	+ 0,8	+ 3,4
1675	1315	1030	795	0,15	0,31	0,50	+ 0,1	+ 3,7	+11,2
2525	1940	1485	1150	0,12	0,25	0,40	— 0,5	+ 2,1	+ 6,7
2355	1800	1395	1095	0,12	0,25	0,41	— 0,5	+ 2,1	+ 6,7
2200	1720	1335	1060	0,10	0,21	0,33	— 0,6	+ 1,1	+ 4,3
2270	1760	1385	1100	0,10	0,21	0,33	— 0,6	+ 1,1	+ 4,3
2270	1745	1335	1000	0,11	0,21	0,33	— 0,4	+ 1,3	+ 4,3
2200	1685	1285	970	0,10	0,21	0,34	— 0,4	+ 1,3	+ 4,3
3030	2310	1760	1340	0,10	0,22	0,35	— 0,6	+ 0,9	+ 3,9
3030	2310	1760	1330	0,10	0,22	0,35	— 0,6	+ 0,9	+ 3,9
2990	2380	1840	1425	0,08	0,18	0,28	— 0,7	+ 0,5	+ 2,7
2835	2225	1745	1355	0,08	0,18	0,29	— 0,7	+ 0,5	+ 2,7
4215	3225	2455	1930	0,08	0,18	0,29	— 0,7	+ 0,5	+ 2,7
2835	2155	1665	1300	0,09	0,19	0,30	— 0,7	+ 0,5	+ 2,7
2990	2290	1745	1370	0,08	0,18	0,29	— 0,7	+ 0,5	+ 2,7
2835	2155	1665	1300	0,09	0,19	0,31	— 0,7	+ 0,5	+ 2,7
2760	2295	1905	1605	0,11	0,23	0,37	— 0,6	+ 1,4	+ 5,8